SPECIFICATIONS

HIGH PERFORMANCE CHIP SEAL
PROJECT NO. 99-306-434-097-901
ACCT. NO. 100054516

SR 97 in Lowndes Co.
Milepost 10.6 to Milepost 14.8
District Four – Sixth Division

Requisition No.: 640-061600
Snap No.: 1442929

1.0 CONTRACTOR REQUIREMENTS – GENERAL

1.1 Pursuant to section 34-8-1(a) of the Code of Alabama, each contractor must submit with their bid, proof of licensing through the Alabama State Board of Licensing for General Contractors, with approved maximum bid limits sufficient to cover the bid related to this specification. Failure to comply will be cause for rejection of the bid. A copy of the vendor's current year's license will expedite the evaluation process.

******APPLIES TO BIDS IN EXCESS OF $50,000.00 ONLY!******

1.2 Each contractor should submit with their bid, proof of liability insurance in the minimum amount of $500,000 per occurrence, $1,000,000 aggregate. Each contractor should further provide proof of workman's compensation insurance sufficient to satisfy all legal requirements of the State of Alabama. Failure to provide this documentation with the bid package will delay the bid evaluation process.

1.3 The successful bidder will be required to submit a performance bond, in the amount of the bid price prior to award of the purchase order.

1.4 All documentation MUST be submitted prior to award of the purchase order. All insurance certificates and bond instrument shall indicate State of Alabama, Department of Finance, and Division of Purchasing as certificate bond holder.

1.5 In accordance with Section 41-16-59 of the Code of Alabama, the successful bidder in this solicitation is restrained from assigning or sub-contracting any portion of the work under this contract.

1.6 Due to the nature of this project, award will be made on an "All or None" basis to the recommended vendor, who during the course of our bid evaluation is found to be the lowest responsible bidder. Each vendor will indicate a "per item" unit price in the appropriate blank in the text of the requisition. Award will be made adding together all unit item costs for a total bid.

2.0 WORK SCOPE

2.1 All work shall be done in compliance with applicable sections of the Alabama Department of Transportation Standard Specifications for Highway Construction, Current Edition, Alabama Department of Transportation Standard Drawings, and the MUTCD. The materials used shall be chosen from the Materials, Sources, and Devices with Special Acceptance Requirements Manual.

2.2 The traffic control scheme shall be submitted to the District Manager for his review prior to starting work. The successful bidder will contact the District Manager fourteen (14) days prior to initiating work to coordinate any work to be performed by State Forces, to include clipping shoulders and removing existing pavement markers.

2.3 The quantity stated in this solicitation is an estimate only for comparative purpose and in no way obligates the department to any specific quantity of purchases or patching. Actual maintenance requirements may be less than or greater than the estimated quantity as shown for each item. All quantities and dimensions are estimated and should be field verified by contractor.

2.4 The contractor will be responsible for all traffic control measures. Attention is drawn to the fact that this work will be performed under traffic conditions requiring special care to expedite the work and prevent undue hazardous conditions. The contractor will be responsible for all traffic control devices (MUTCD) and Chapter VI of the most current edition of the Standards and Guides for Traffic Controls for Street and Highway Construction, Maintenance, Utility, and Incidental Management Operations.

2.5 The pavement surfacing will be allowed a 14-day curing period before the placement of permanent striping and pavement markers.

3.0 PERFORMANCE REQUIREMENTS

3.1 Bid price shall include all materials, hardware, supplies, tools, equipment, labor, transportation and other necessary incidentals required for the completion of the work in an approved and satisfactory manner.

3.2 If required, on-site storage of job materials and/or equipment is to be coordinated with the District Manager prior to the beginning of work. The security of any material and/or equipment left on-site will be the responsibility of the contractor.

3.3 The performance of any work under these specifications will not be deemed complete until the contractor has satisfactorily removed all debris and cleaned up the work site. At no time during the performance of work will materials, debris, or trash be allowed to accumulate in such a manner as to endanger the safe performance of the work or the safety of the traveling public.

3.4 Locations of pavement surfacing treatments will be specified at the direction of the Division Maintenance Engineer. Contractor shall begin work within 14 days of notification by the Division Maintenance Engineer and work shall be completed in a timely manner per move-in. The contractor shall provide the Division Maintenance Engineer a daily placement report by County. Delivery tickets for aggregates and a BMT-146 for asphalt shall be furnished to the Department.

3.5 Pavement surfacing (High Performance Chip Seal) is required. The Alabama Department of Transportation Special Provision No. 06-0753, Section 404, covers this application and is attached to these specifications.

4.0 PAYMENT

4.1 Unit of payment will be "per square yard" to two (2) decimal places for the work listed on this solicitation. Payment will be per move-in for the project. Invoice must itemize materials and services rendered. Invoice to be submitted and processed after final acceptance of the work per move-in.

4.2 Contractor will be paid for the total area of bituminous surface treatment as requested by the Division Maintenance Engineer.

4.3 Payment in accordance with unit prices as bid will be payment in full for all labor, fuel, equipment, materials, traffic control, incidentals and other items of work. **Mobilization will be a subsidiary obligation of Section 401 (Bituminous Surface Treatments).**

4.4 Commodity Code: 968-62-067066 (High Performance Chip Seal)
as per Section 401 Bituminous Surface Treatments

Commodity Code: 968-56-089719 (Traffic Stripe & Pavement Markers)
as per 2008 Standard Specifications for Highway Construction

4.5 Estimated Quantity: 64,798 Square yards

Traffic Striping and Markings

Total	Unit	Description
8.6	Mile	Solid White, Class 2, Type A Traffic Stripe (5" Wide)
2.2	Mile	Solid Yellow, Class 2, Type A Traffic Stripe (5" Wide)
2.25	Mile	Broken Yellow, Class 2, Type A Traffic Stripe (5" Wide)
2.25	Mile	Broken Temporary Traffic Stripe
2.2	Mile	Solid Temporary Traffic Stripe
0	L.F.	Solid White, Class W, Type A Traffic Stripe (5" Wide)
0	L.F.	Broken Yellow, Class W, Type A Traffic Stripe (5" Wide)
0	L.F.	Solid Yellow, Class W, Type A Traffic Stripe (5" Wide)
0	L.F.	Solid Traffic Stripe Removed (Plastic)
0	L.F.	Broken Traffic Stripe Removed (Plastic)
0	S.F.	Traffic Control Markings, Class 2, Type A
0	S.F.	Traffic Control Legends, Class 2, Type A
0	S.F.	Temporary Traffic Control Markings
113	Each	Pavement Markers, Class A-H, Type 1-B
425	Each	Pavement Markers, Class A-H, Type 2-D

Contact Mr. Josh Kervin, District Manager at (334) 382-6614 for information if needed.

ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: January 9, 2008 Special Provision No. 06-0753

SUBJECT: Pavement Surfacing (High Performance Chip Seal)
Projects Number 99-306-434-097-901 Lowndes County.

Alabama Standard Specifications, 2006 Edition, shall be amended as follows (this includes the addition of a new SECTION 404):

SECTION 404
PAVEMENT SURFACING
(HIGH PERFORMANCE CHIP SEAL)

404.01 Description.

This Section covers the placement of pavement surfacing that is composed of an application of polymer-modified asphalt emulsion which is followed immediately by the placement of a single layer of aggregate.

404.02 Materials.

(a) EMULSION.

The polymer modified asphalt emulsion (PMAE) shall be co-milled at the manufacturer's facility using polymer modified binder or polymer injected into the binder line before it enters the emulsion mill. Only Styrene-Butadiene-Rubber (SBR), Styrene-Butadiene-Styrene (SBS), or Styrene-Butadiene (SB) polymer modifiers will be allowed. A sample of the PMAE, along with an infrared trace as noted in AASHTO T 302 showing the styrene and butadiene peaks and percentage of polymer, shall be submitted annually, or when asphalt source changes, to the Materials and Tests Engineer for laboratory evaluation prior to use.

The polymer modified asphalt emulsion shall be smooth and homogeneous. The emulsion shall meet the requirements shown in the following table:

POLYMER MODIFIED ASPHALT EMULSION (PMAE)			
TEST OF EMULSION			
Parameter	Test Method	Value	
Viscosity @ 122 °F, SF [1]	AASHTO T 59	25 Min.	600 Max.
Sieve Test, %	AASHTO T 59	-	0.5 Max.
Residue By Distillation @ 400 °F	AASHTO T 59	65 Min.	-
Oil Distillate, by Volume of Emulsion, %	AASHTO T 59	-	2.0 Max.
Particle Charge	AASHTO T 59	Positive [2]	
TEST OF RESIDUE FROM EMULSION			
Parameter	Test Method	Value	
Elastic Recovery @ 50 °F	AASHTO T-301	60.0 % Min.	-
Penetration [3] @ 77 °F	AASHTO T 49	60 Min.	120 Max.
EMULSION LABORATORY TEST FOR FIELD PERFORMANCE			
Parameter	Test Method	Value	
Sweep Test	ASTM D 7000	15 Max. Loss[4]	

1. Viscosity samples shall be tested at the production plant prior to shipping to the job site.
2. If the Particle Charge Test is inconclusive, a pH test (AASHTO T 200) shall be used with a maximum pH of 6.7 allowable.
3. Residue penetration is climate specific. The emulsion supplier shall provide the emulsion sample.
4. The emulsion supplier shall provide test results for the Sweep Test prior to shipping to the job site.

(b) AGGREGATE.

Coarse aggregate shall meet the requirements given in Section 801 and shall be crushed aggregate produced from granite, limestone, steel slag, blast furnace slag, sandstone, or quartzite obtained through normal quarrying operations. The use of carbonate stone such as limestone, dolomite, or aggregate tending to polish under traffic shall be restricted to roadways with < 500 vehicles per day, based on average daily traffic (ADT) count in both directions. In addition, Section 801 for coarse aggregate shall be modified as follows:

The aggregate gradation, when sampled at the jobsite stockpile in accordance with the requirements given in AASHTO T2, shall be:

AGGREGATE SIZE, COMPOSITION BY WEIGHT (AASHTO T-27 & T11)				
Parameter	Job Site Stockpile		Job Site Stockpile	
Sieve Size	% Passing*, for ADT < 5000		% Passing*, for ADT >= 5000	
1/2 Inch	98.0 Min.	100 Max	98.0 Min.	100 Max
3/8 Inch	88.0 Min.	100 Max.	88.0 Min	100 Max.
# 4		29.0 Max.		16.0 Max
# 200		1.5 Max.		1.5 Max.
* % passing values must be within the bands listed for stockpile approval				

AGGREGATE PROPERTIES			
Parameter	Test Method	Minimum	Maximum
Absorption	AASHTO T-84/85		2%
LA Abrasion	AASHTO T 96		35[+]
Micro-Deval	AASHTO TP 58		18[+]
Flat and Elongated (3:1 Ratio) or	ASTM D 4791		20%
Flakiness			17%
[+] If the value for Micro-Deval or LA Abrasion exceeds the maximum limit, a sum < 55 can be used in place of the minimums in the table. (LA+MD<55)			

404.03 Construction Requirements.

(a) PLACEMENT RATES.

The required application rates for the emulsion (gallons per square yard) and aggregate (pounds per square yard) will be shown on the plans.

The application rate for the emulsion will generally be from 0.35 to 0.55 gallons per square yard. The tolerance on the placement rate will be +/- 10% of the required number of gallons per square yard.

The application rate for the aggregate will generally be from 15 to 25 pounds per square yard. The tolerance on the placement rate will be +/- 10% of the required number of pounds per square yard.

(b) WEATHER.

The pavement surfacing shall only be applied when the ambient temperature is above 60 °F and shall not be applied when the temperature of the pavement surface on which the treatment is to be applied is below 60 °F. The temperature shall be taken in the shade.

The application of the pavement surfacing shall be stopped a minimum of 2 hours prior to expected rain and 24 hours prior to expected freezing temperatures.

(c) SURFACE PREPARATION.

The area to be covered shall be cleaned of dirt, dust and other deleterious materials prior to the application of the surfacing.

(d) TEST SECTION.

The Contractor shall demonstrate the capability of meeting the placement requirements. The materials used in the test section shall be those that are proposed for production use. The Engineer will identify the location and length of the test section. The test section shall be one lane, 12 feet in width and up 1000 feet long. If the application to the test section is unsuccessful, the Contractor shall make the necessary corrections and apply a new test section without additional compensation.

The placement rate and adhesion of the emulsion and aggregate will be evaluated.

(e) MATERIAL APPLICATION.

There shall be a minimum of 3 rollers available for construction. More rollers may be required depending on the planned application width, speed, and rolling pattern. The entire surface shall be rolled a minimum of one time prior to the sweeping operation.

Prior to starting the application, sufficient materials shall be available for continuous application. Water shall not be evident on the aggregate or in the supply vehicles.

Feed vehicles shall transfer aggregate to the application vehicle without spillage to prevent the presence of loose aggregate on the road surface prior to emulsion application.

Paper or other suitable material shall be used to prevent overlapping of transverse joints. Longitudinal joints shall match lane lines unless approved otherwise by the Engineer.

The aggregate surface shall be visibly moist for proper application. If necessary, the stockpile shall be sprayed with water to maintain aggregate moisture. If water is draining from the aggregate trucks, the moisture is excessive.

(f) EXCESS AGGREGATE REMOVAL.

The pavement surfacing system shall exhibit sufficient adhesion to the pavement surface to allow sweeping without damage to the surface treatment within two hours after application. Surplus

aggregate shall be removed from the finished surface by sweeping after all rolling is completed. Particular attention shall be given to all construction joints to fully remove excess material from these locations. There shall be a minimum of 4 rotary brooms available to sweep all areas of the surface a minimum of three times and keep up with the application vehicle so that the application process is continuous.

The application area shall not be released to normal traffic until excess aggregate has been removed from the road surface to the satisfaction of the Engineer.

(g) EQUIPMENT.

1. APPLICATION VEHICLE.

The application vehicle shall be capable of applying a uniform application of emulsion and cover aggregate without the vehicle driving on the newly applied surface. The application vehicle shall have integrated dual spray bar and aggregate spread hopper whose width can be varied independently during operation. The application vehicle and support trucks shall be capable of continuously applying the emulsion and aggregate. The application vehicle shall be capable of applying the aggregate so that no more than a length of 48 inches of emulsion application is on the road surface without cover aggregate. All systems for the application of materials shall be computer controlled.

2. SPREAD HOPPER.

The spread hopper shall consist of a variable width hopper system including driven augers and spread rolls. The hopper width shall be synchronized with the spray bar width. This width shall be continuously variable in 4 inch increments at application widths greater than 10 feet and variable in 12 inch increments at application widths less than 10 feet. There shall be continuous conveyor feed to the hopper system. A suitable full-width screen with 2 inch mesh to reject all oversized materials and foreign objects shall cover the spread hopper. The aggregate spreader shall be calibrated in accordance with ASTM D 5624. The allowable deviation in the amount of aggregate spread in both transverse and longitudinal directions shall be ±1.0 pound per square yard.

3. CONTROL SYSTEMS.

The Application Rate Computer shall be able to vary either aggregate or emulsion application rates continuously during vehicle operation. The aggregate computer shall monitor the speed of the application vehicle, and vary the gate opening in order to maintain the set application rate, in pounds per square yard at forward operating speeds. The emulsion and aggregate computers shall vary the output of emulsion pumps and or aggregate application to maintain the required application rate at forward operating speeds regardless of changes in application width. The emulsion computer shall also indicate gallons sprayed, length of roadway surfaced, and area of roadway surfaced. The equipment shall be calibrated at the start of each project.

4. EMULSION APPLICATION SYSTEM.

An insulated emulsion tank shall be provided on the application vehicle. The tank shall have a functional capacity gage. The operator's station shall have an indicator of the tank emulsion level. The vehicle shall be capable of transferring additional emulsion into the tank during continuous operation. A removable strainer shall be supplied to remove the potential for unwanted material from entering the emulsion tank.

The spray bars shall allow for positive circulation from one end of the bar to the other. Nozzles shall be spaced on no greater than 4 inch centers on the spray bars. There shall be an individual valve for each spray nozzle, so the spray width can be adjusted synchronously with the aggregate hopper width during operation. The spray bar operating width shall be synchronized with the aggregate hopper width. The width shall be continuously variable in not greater than 4 inch increments at application widths greater than 10 feet and variable in 12 inch increments at application widths less than 10 feet.

The application equipment shall be capable of measuring and recording the total emulsion applied with an accuracy of +/- 5%. A daily log shall be maintained to record the total area covered and the total volume of emulsion applied.

5. SUPPORT VEHICLES.

There shall be support vehicles to allow for continuous feeding and operation of the application vehicle. The support vehicles shall be capable of simultaneously feeding both aggregate and

emulsion to the application vehicle. The support vehicles shall be capable of supplying the application vehicle as the application vehicle moves forward during construction.

6. ROLLERS.

The rollers shall be self-propelled and equipped with smooth pneumatic tires. Under working conditions, the rollers shall have a minimum effective rolling width of approximately 5.7 ft. The minimum total weight for the rollers shall be 12.5 tons. However, larger rollers may be allowed upon request.

The rollers shall be equipped with tires that will afford ground contact pressures of 80 psi or more. The operating load and tire pressure shall be within the range of the manufacturer's charts showing the contact areas and contact pressures for the full range of tire inflation pressures and for the full range of loadings for the particular tires furnished. Under working conditions, the rollers shall be within plus or minus 5 psi of each other.

The power unit shall have adequate tractive effort to properly move the operating rollers at variable uniform speeds up to a maximum of 5 miles per hour. The rollers shall be equipped with automatic tire cleaning scrapers to remove any aggregate that may adhere to the roller tires during operation. The cleaning system shall be operational during construction.

7. AGGREGATE REMOVAL EQUIPMENT.

Rotary brooms of various types are acceptable for excess aggregate removal. All rotary brooms shall have the following capabilities and shall be in good repair in order to apply controlled uniform sweeping pressure across the width of the broom. Equipment tires shall have road tread; no tractor tires are permitted. The equipment shall have variable down pressure, variable angle of approach, and independently controllable variable rotational speed. The broom bristles shall be straight, a minimum of 5 inches in length, and uniform length across the width of the broom. The vertical motion of the broom shall keep the axis of the broom parallel to the road surface at all times; the entire width of the broom shall contact the pavement essentially simultaneously as the broom contacts the road surface.

8. WATER TRUCK.

The water truck, if required, shall be suitably equipped to allow spraying of the aggregate stockpile to maintain proper aggregate moisture.

9. EMULSION STORAGE AND HANDLING EQUIPMENT.

All equipment used in storing or handling High Performance Chip Seal emulsion shall be kept clean and in good operating condition at all times and shall be operated in such a manner that there will be no contamination of the emulsion. The emulsion shall be transferred directly to the support vehicles or application equipment from the transport tankers; a distributor may be used for short term materials storage. Material not used within 48 hours (including the materials stored in distributors) of initial delivery should be returned to the producing facility. The contractor shall provide and maintain a temperature-measuring device to indicate the temperature of the emulsion in the transport tankers. The temperature of the emulsion shall be maintained at a minimum of 140 °F in the transport tankers. Emulsion shall not be stored in the application vehicle overnight.

(h) SAMPLING.

Samples of the aggregate shall be taken at the stockpile site prior to delivery to the job. A sample shall be taken within the first 100 tons and every 500 tons thereafter. In addition, "spot" samples may be taken anytime during production at the discretion of the Engineer. If the average of the test results from any three consecutive samples (from the stockpile) varies from the stockpile gradation requirements given in 404.02(b), placement shall stop. The contractor shall identify the cause of the discrepancy and document in detail what corrective action was taken. Documentation of the corrective action shall be furnished to the Engineer before placement can continue.

(i) ACCEPTANCE.

The Contractor shall be responsible for the maintenance of the surface treatment until the work is accepted by the Engineer. Damage or loss of aggregate in the surface exceeding 2% of the surface area in any 500 foot long section shall be repaired by use of additional asphalt and aggregate.

All bleeding (excess asphalt) surfaces shall be covered with approved cover material in such a manner that the asphaltic material will not adhere to or be picked up by the wheels of vehicles.

If in the Engineer's judgment, defective areas warrant removal, the Contractor shall remove and replace those areas at the Contractor's expense with materials meeting specification requirements.

404.04 Method of Measurement.

The pavement surfacing will be measured in units of square yards.

404.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

The unit price of the pavement surfacing shall be full compensation for all materials, equipment, tools, and labor required for furnishing and placing the pavement surfacing.

(b) PAYMENT WILL BE MADE UNDER ITEM NO.:

404-G Pavement Surfacing (*) - per square yard

* High Performance Chip Seal